

CLAIMS

- 5 1. A device for the damped elastic connection of two parts, the device comprising at least one set of at least two tubular cylindrical sleeves of viscoelastic material fitted one inside the other substantially coaxially with the interposition of a rigid cylindrical and substantially coaxial ring between two contiguous viscoelastic sleeves of said set so that, for each pair of two contiguous sleeves, one of the two sleeves is an internal sleeve secured, by an internal cylindrical lateral face, to an external cylindrical lateral face facing it belonging to an internal rigid ring and, by an external cylindrical lateral face of said internal sleeve to an internal cylindrical lateral face facing it belonging to an intermediate rigid ring separating said internal sleeve from the other sleeve of said pair of sleeves, which is an external sleeve secured, by an internal cylindrical lateral face, to an external cylindrical lateral face of said intermediate ring and, by an external cylindrical lateral face of said internal sleeve, to an internal cylindrical lateral face of an external rigid ring, an innermost ring and an outermost ring of said set being secured, respectively, to an internal armature and to an external armature, each of which is connected to a respective one of two members for connection to said parts,

10 20 25 wherein, for each pair of two contiguous sleeves of said set, the internal sleeve and the external sleeve are made of a viscoelastic material which has a shear modulus g_1 and g_2 respectively, and have an axial length L_1 and L_2 respectively, an inside radius R_1 and R_2 respectively and a thickness e_1 and e_2 respectively, giving them a geometry such that the following formula is substantially satisfied:

$$g_1 \cdot \frac{L_1}{\ln(1 + \frac{e_1}{R_1})} = g_2 \cdot \frac{L_2}{\ln(1 + \frac{e_2}{R_2})}$$

- 30 2. A device according to Claim 1, wherein each of two annular axial end faces of each viscoelastic sleeve is shaped as a meniscus delimited by a curved free surface with a concave side facing axially outwards, and said axial length of each sleeve is measured between bottoms of the menisci of said two annular end faces of said sleeve.

- 35 3. A device according to Claim 1, wherein the viscoelastic material of the sleeves is an elastomer.

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5 15. A method of manufacturing a device for damped elastic connection according to Claim 1, the method comprising for manufacturing said at least one set of at least two viscoelastic sleeves, at least the steps consisting in :

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